



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,178	04/22/2004	Takashi Suda	Q81051	6041

7590 01/04/2007
SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3213

EXAMINER

RENNER, CRAIG A

ART UNIT	PAPER NUMBER
----------	--------------

2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/829,178

Applicant(s)

SUDA, TAKASHI

Examiner

Craig A. Renner

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>22 April 2004 & 09 Feb 2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of "Group I, Claims 1 and 3-20" in the reply filed on 04 October 2006 is acknowledged. Accordingly, claim 2 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to one or more non-elected inventions/species, there being no allowable generic or linking claim.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The drawings are objected to because of the following informalities:

a. The drawings fail to comply with 37 CFR 1.84(p)(5) because they include one or more reference signs not mentioned in the description. Note, for instance "GB" (shown twice in FIG. 3B, for instance), "Ba'" (shown in FIG. 4B, for instance), "Bb'" (shown in FIG. 4B, for instance), and "SP'" (shown in FIG. 4B, for instance).

b. FIGS. 4B, 5B, 5C and 5D should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) and/or an amendment to the specification in compliance with 37 CFR 1.121(b) are required in

reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
5. The disclosure is objected to because of the following informalities:
 - a. In line 22 on page 3, "combined magnetic head H' " should be changed to --combined magnetic head H1'-- in order to be consistent with the remainder of the disclosure.
 - b. In lines 22-23 on page 3, "non-magnetic magnetic body 50' " should be changed to --non-magnetic body 50'-- in order to be consistent with the remainder of the disclosure.
 - c. In line 26 on page 9, "titan" should be changed to --titanium-- in order to be consistent with the formula shown in the same line.

- d. In line 1 on page 10, "titan oxide calcium" should be changed to --calcium titanate-- in order to be consistent with the formula shown in the same line.
- e. In line 25 on page 11, "titan (Ti)" should be corrected to --titanium (Ti)--.
- f. In line 25 on page 11, "titan oxide calcium" should be changed to --calcium titanate-- in order to be consistent with the formula shown in line 26 on page 11.
- g. In line 23 on page 16, "servo pattern SP1" should be changed to --servo pattern SP-- in order to be consistent with the remainder of the disclosure.
- h. In line 2 in each of claims 18-20, "titan oxide calcium" should be changed to --calcium titanate-- in order to be consistent with the requirements in paragraphs 5d and 5f, supra.

Appropriate correction is required.

6. The use of the trademarks "Permalloy, Sendust, [and] Alperm" have been noted in this application. See lines 22-23 on page 9 and line 3 in each of claims 14-17. It should be capitalized wherever it appears and be accompanied by the generic terminology (emphasis added).

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 14-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In lines 1-3 in each of claims 14-17, “wherein a magnetic layer, magnetic film, and surface magnetic layer of said DC erase head are formed of any of Permalloy, Sendust, Alperm, and amorphous” is indefinite as it is misdescriptive of the disclosure, which teaches/shows that magnetic layer 11b, magnetic film 12, and surface magnetic layer 13 of DC erase head 10 are formed of any of Permalloy, Sendust, Alperm, and an amorphous alloy (emphasis added). See lines 18-23 on page 9, for instance.

b. In line 3 in each of claims 14-17, the use of the trademarks/trade names “Permalloy, Sendust, [and] Alperm” is indefinite. A trademark/trade name is used to identify a source of goods, and not the goods themselves. Therefore, the scope of the claims cannot be ascertained as the particular material or product identified by the trademark/trade name may vary since the trademark/trade name cannot be used properly to identify any particular material or product. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Makimura (US 3,371,164).

Makimura teaches a combined magnetic head comprising a DC erase head (includes 6 and 7, for instance, see lines 10-12 in column 2, for instance) and a write head (includes 6' and 7', for instance, see lines 12-14 in column 2, for instance), wherein the DC erase head and the write head are integrally configured through a non-magnetic body (2, see line 67 in column 1, for instance), and wherein a DC erase head gap (5) of the DC erase head and a write head gap (5') of the write head are aligned in relative movement longitudinal directions (as shown in Figs. 1A and 1B, for instance) [as per claim 1]; wherein a magnetic layer (4), magnetic film (3), and surface magnetic layer (between 5 and 7) of the DC erase head are formed of any of Permalloy, Sendust, Alperm, and an amorphous alloy (lines 1-4 in column 4, for instance) [as per claim 14]. With respect to the intended use limitations appearing throughout claim 1, note that a recitation with respect to the manner in which a claimed apparatus (i.e., a "combined magnetic head") is intended to be employed (i.e., "for magnetizing a servo band of a magnetic tape in one of longitudinal directions of said magnetic tape with contacting the

magnetic tape that is running” and “for magnetizing a servo signal in a reverse direction for said one direction and writing the servo signal on said servo band, with contacting said magnetic tape”, for instance) does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations, *Ex parte Masham*, 2 USPQ2d 1647 (PTO BPAI 1987). As the claims are directed to a “combined magnetic head”, per se, the method limitation appearing in line 12 of claim 1 can only be accorded weight to the extent that it affects the structure of the completed combined magnetic head. Note that “[d]etermination of patentability in ‘product-by-process’ claims is based on product itself, even though such claims are limited and defined by process [i.e., “simultaneously formed with one mask by a photolithography method,” for instance], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process”, *In re Thorpe, et al.*, 227 USPQ 964 (CAFC 1985). Furthermore, note that a “[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., “simultaneously formed with one mask by a photolithography method,” for instance], is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations”, *In re Hirao and Sato*, 190 USPQ 685 (CCPA 1976).

11. Claims 1 and 3-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Inagoya et al. (US 5,057,955).

Inagoya teaches a combined magnetic head comprising a DC erase head (2) and a write head (1), wherein the DC erase head and the write head are integrally configured through a non-magnetic body (3), and wherein a DC erase head gap (17) of the DC erase head and a write head gap (16) of the write head are aligned in relative movement longitudinal directions (as shown in FIGS. 4 and 5, for instance) [as per claim 1]; wherein a first base member (30, for instance) has a coil groove (26, for instance) where a coil (27, for instance) is wound, and on an inner circumference face thereof, a magnetic layer (31, for instance) is formed [as per claims 3 and 4]; wherein a DC erase head gap (13) is formed of silica (lines 39-40 in column 1, for instance, i.e., "silicon dioxide" is silica) [as per claims 5-7]; wherein a write head gap (7) is formed of silica (lines 26-27 in column 1, for instance, i.e., "silicon dioxide" is silica) [as per claims 8-13]; and wherein a magnetic layer (44, for instance), magnetic film (lower portion of 47, for instance), and surface magnetic layer (upper portion of 47, for instance) of the DC erase head are formed of any of Permalloy, Sendust, Alperm, and an amorphous alloy (lines 46-47 in column 6, for instance, i.e., an amorphous alloy) [as per claims 14-17]. With respect to the intended use limitations appearing throughout claim 1, note that a recitation with respect to the manner in which a claimed apparatus (i.e., a "combined magnetic head") is intended to be employed (i.e., "for magnetizing a servo band of a magnetic tape in one of longitudinal directions of said magnetic tape with contacting the magnetic tape that is running" and "for magnetizing a servo signal in a reverse direction for said one direction and writing the servo signal on said servo band, with contacting said magnetic tape", for instance) does not differentiate the claimed apparatus from a

prior art apparatus satisfying the claimed structural limitations. See *Ex parte Masham*, supra. As the claims are directed to a “combined magnetic head”, per se, the method limitations appearing in line 12 of claim 1 and line 3 in each of claims 3 and 4 can only be accorded weight to the extent that they affect the structure of the completed combined magnetic head. Note that “[d]etermination of patentability in ‘product-by-process’ claims is based on product itself, even though such claims are limited and defined by process [i.e., “simultaneously formed with one mask by a photolithography method,” “formed by a sputtering method” and “formed by a plating method,” for instance], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process.” See *In re Thorpe, et al.*, supra. Furthermore, note that a “[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., “simultaneously formed with one mask by a photolithography method,” “formed by a sputtering method” and “formed by a plating method,” for instance], is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations.” See *In re Hirao and Sato*, supra.

12. Claims 1 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Okada et al. (US 5,309,306).

Okada teaches a combined magnetic head comprising a DC erase head (includes 20 and 21, for instance) and a write head (includes 18 and 19, for instance), wherein the DC erase head and the write head are integrally configured through a non-

Art Unit: 2627

magnetic body (33), and wherein a DC erase head gap (37) of the DC erase head and a write head gap (36) of the write head are aligned in relative movement longitudinal directions (as shown in FIG. 1, for instance) [as per claim 1]; wherein the non-magnetic body is formed of any of AlTiC, calcium titanate, and non-magnetic ferrite (lines 11-13 in column 8, for instance) [as per claim 18]. With respect to the intended use limitations appearing throughout claim 1, note that a recitation with respect to the manner in which a claimed apparatus (i.e., a “combined magnetic head”) is intended to be employed (i.e., “for magnetizing a servo band of a magnetic tape in one of longitudinal directions of said magnetic tape with contacting the magnetic tape that is running” and “for magnetizing a servo signal in a reverse direction for said one direction and writing the servo signal on said servo band, with contacting said magnetic tape”, for instance) does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. See *Ex parte Masham*, supra. As the claims are directed to a “combined magnetic head”, per se, the method limitation appearing in line 12 of claim 1 can only be accorded weight to the extent that it affects the structure of the completed combined magnetic head. Note that “[d]etermination of patentability in ‘product-by-process’ claims is based on product itself, even though such claims are limited and defined by process [i.e., “simultaneously formed with one mask by a photolithography method,” for instance], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process.” See *In re Thorpe, et al.*, supra. Furthermore, note that a “[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., “simultaneously formed

with one mask by a photolithography method,” for instance], is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations.” See *In re Hirao and Sato*, supra.

13. Claims 1, 5, 8 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Miwa et al. (US 5,790,353).

Miwa teaches a combined magnetic head (FIG. 27, for instance) comprising a DC erase head (6) and a write head (1), wherein the DC erase head and the write head are integrally configured through a non-magnetic body (11), and wherein a DC erase head gap (10) of the DC erase head and a write head gap (5) of the write head are aligned in relative movement longitudinal directions (as shown in FIG. 27, for instance) [as per claim 1]; wherein a DC erase head gap (10) is formed of silica (lines 44-49 in column 1, for instance, i.e., “SiO₂” is silica) [as per claim 5]; and wherein a write head gap (5) is formed of silica (lines 32-35 in column 1, for instance, i.e., “SiO₂” is silica) [as per claims 8 and 11]. With respect to the intended use limitations appearing throughout claim 1, note that a recitation with respect to the manner in which a claimed apparatus (i.e., a “combined magnetic head”) is intended to be employed (i.e., “for magnetizing a servo band of a magnetic tape in one of longitudinal directions of said magnetic tape with contacting the magnetic tape that is running” and “for magnetizing a servo signal in a reverse direction for said one direction and writing the servo signal on said servo band, with contacting said magnetic tape”, for instance) does not differentiate the

claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. See *Ex parte Masham*, supra. As the claims are directed to a “combined magnetic head”, per se, the method limitation appearing in line 12 of claim 1 can only be accorded weight to the extent that it affects the structure of the completed combined magnetic head. Note that “[d]etermination of patentability in ‘product-by-process’ claims is based on product itself, even though such claims are limited and defined by process [i.e., “simultaneously formed with one mask by a photolithography method,” for instance], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process.” See *In re Thorpe, et al.*, supra. Furthermore, note that a “[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., “simultaneously formed with one mask by a photolithography method,” for instance], is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations.” See *In re Hirao and Sato*, supra.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inagoya et al. (US 5,057,955).

Inagoya teaches the combined magnetic head as detailed in paragraph 11, supra. Inagoya, however, remains silent as to the non-magnetic body material being any of AlTiC, calcium titanate, and non-magnetic ferrite.

Official notice is taken of the fact that at least one of AlTiC, calcium titanate, and non-magnetic ferrite is a notoriously old and well known non-magnetic body material in the combined magnetic head art. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the non-magnetic body material of Inagoya be any of AlTiC, calcium titanate, and non-magnetic ferrite.

The rationale is as follows:

One of ordinary skill in the art would have been motivated to have had the non-magnetic body material of Inagoya be any of AlTiC, calcium titanate, and non-magnetic ferrite since at least one of AlTiC, calcium titanate, and non-magnetic ferrite is a notoriously old and well known non-magnetic body material in the combined magnetic head art, and since selecting a known material on the basis of its suitability for the intended use is within the level of ordinary skill in the art, *In re Leshin*, 125 USPQ 416 (CCPA 1960).

Pertinent Prior Art

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes Munroe (US 2,668,878), Murphy et al. (US

3,311,710), Rosado et al. (US 3,412,216), Marino et al. (US 3,668,669), Okamura et al. (US 4,939,608), Lee (US 5,040,087), Nishimura et al. (US 5,450,264), and Denison et al. (US 2003/0123185), which each individually teaches a combined magnetic head comprising an erase head and a write head, wherein the erase head and the write head are integrally configured through a non-magnetic body, and wherein an erase head gap of the erase head and a write head gap of the write head are aligned along a longitudinal direction.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (571) 272-7580. The examiner can normally be reached on Monday-Tuesday & Thursday-Friday 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Craig A. Renner
Primary Examiner
Art Unit 2627

CAR